



STIC Search Report

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TO: Ralph J Gitomer
Location: 3d65 / 3e71
Art Unit: 1651
Monday, December 27, 2004

Case Serial Number: 10/039952

From: Noble Jarrell
Location: Biotech-Chem Library
Rem 1B71
Phone: 272-2556

Noble.jarrell@uspto.gov

Search Notes

=> d his

(FILE 'HOME' ENTERED AT 13:25:27 ON 27 DEC 2004)

FILE 'HCAPLUS' ENTERED AT 13:25:31 ON 27 DEC 2004

L1 1 US20020061564/PN
E US2001-288378/AP, PRN
L2 1 US2001-288378P/AP, PRN
L3 1 L1-2

FILE 'REGISTRY' ENTERED AT 13:26:36 ON 27 DEC 2004

FILE 'HCAPLUS' ENTERED AT 13:26:37 ON 27 DEC 2004

L4 TRA L3 1- RN : 43 TERMS

FILE 'REGISTRY' ENTERED AT 13:26:37 ON 27 DEC 2004

L5 43 SEA L4

FILE 'WPIX' ENTERED AT 13:26:40 ON 27 DEC 2004

L6 1 US20020061564/PN
L7 1 US2001-288378P/AP, PRN
L8 1 L6-7

=> b hcap

FILE 'HCAPLUS' ENTERED AT 13:27:14 ON 27 DEC 2004

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FILE COVERS 1907 - 27 Dec 2004 VOL 142 ISS 1

FILE LAST UPDATED: 24 Dec 2004 (20041224/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d all 13

L3 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:353585 HCAPLUS
DN 136:352318
ED Entered STN: 12 May 2002
TI Method for chemical transformation using a mutated enzyme
IN Rozzell, J. David, Jr.
PA Biocatalytics, Inc., USA
SO PCT Int. Appl., 28 pp.
CODEN: PIXXD2
DT Patent
LA English
IC C12N
CC 9-16 (Biochemical Methods)
Section cross-reference(s): 6, 7

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002036742	A2	20020510	WO 2001-US48577	20011030 <--
	WO 2002036742	A3	20030821		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR,				

Search done by Noble Jarrell

IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG

US 2002061564 A1 20020523 US 2001-39952 20011024 <--
AU 2002032603 A5 20020515 AU 2002-32603 20011030 <--
PRAI US 2000-702421 A 20001031
US 2001-288378P P 20010503 <--
US 2001-39952 A 20011024
WO 2001-US48577 W 20011030

CLASS

PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

WO 2002036742 IC C12N

AB The invention concerns methods for chemical transforming compds. using a mutated enzyme are provided, and more particularly a method for the production of an amino acid from a target 2-ketoacid, the production of an amine from a target ketone and the production of an alc. from a target ketone. The methods comprise creating a mutated enzyme that catalyzes the reductive amination or transamination of the target 2-ketoacid or ketone or the reduction of the ketone and providing the mutated enzyme in a reaction mixture comprising the target 2-ketoacid or ketone under conditions sufficient to permit the formation of the desired amino acid, amine or alc. to thereby produce the amino acid, amine or alc.

ST enzyme mutated chem transformation amino acid alc ketone amination

IT Gene, microbial

RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)

(YPR1; method for chemical transformation using a mutated enzyme)

IT Chirality

Indicators

Mutagenesis

Optical detectors

Oxidation

Reduction

Transamination

pH

(method for chemical transformation using a mutated enzyme)

IT Enzymes, uses

RL: CAT (Catalyst use); PRP (Properties); USES (Uses)

(method for chemical transformation using a mutated enzyme)

IT Ketones, reactions

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)

(method for chemical transformation using a mutated enzyme)

IT Alcohols, preparation

Amines, preparation

Amino acids, preparation

RL: SPN (Synthetic preparation); PREP (Preparation)

(method for chemical transformation using a mutated enzyme)

IT Amination

(reductive; method for chemical transformation using a mutated enzyme)

IT 9031-72-5, Alcohol dehydrogenase

RL: CAT (Catalyst use); PRP (Properties); USES (Uses)

(YPR1; method for chemical transformation using a mutated enzyme)

IT 98-92-0, Nicotinamide

RL: NUU (Other use, unclassified); USES (Uses)

(cofactor; method for chemical transformation using a mutated enzyme)

IT 9000-97-9 9054-65-3, Branched-chain amino acid transaminase 9082-71-7, Leucine dehydrogenase 37332-38-0, Aromatic amino acid transaminase 53414-75-8, Amino acid dehydrogenase 69403-12-9, Phenylalanine dehydrogenase 77106-95-7, Ketoreductase

RL: CAT (Catalyst use); PRP (Properties); USES (Uses)

(method for chemical transformation using a mutated enzyme)

IT 556-02-5, D-Tyrosine 607-97-6, Ethyl 2-ethyl-3-ketobutyrate 610-89-9 620-79-1 638-07-3 815-17-8 943-73-7 1655-07-8, Ethylcyclohexanone-2-carboxylate 5413-05-8 6270-17-3 14397-64-9 20859-02-3, L-tert-Leucine 26782-71-8, D-tert-Leucine 34906-87-1 35597-44-5, S-Phosphinothricin 58438-03-2 62741-58-6 64920-29-2 111726-64-8 418767-58-5

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)

(method for chemical transformation using a mutated enzyme)

IT 98-86-2, Acetophenone, reactions 99-91-2, p-Chloroacetophenone 2142-63-4, m-Bromoacetophenone

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)

(method for chemical transformation using a mutated enzyme)
 IT 70-11-1P, Bromoacetophenone 98-85-1P, 1-Phenylethanol 532-27-4P,
 Chloroacetophenone 618-36-0P, 1-Phenylethylamine 2627-86-3P,
 S-1-Phenylethylamine 3886-69-9P 4187-56-8P, S-1-(p-
 Chlorophenyl)ethylamine 27298-99-3P 139305-96-7P 176707-77-0P
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical
 process); PRP (Properties); SPN (Synthetic preparation); PREP
 (Preparation); PROC (Process)
 (method for chemical transformation using a mutated enzyme)
 IT 7664-41-7, Ammonia, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (method for chemical transformation using a mutated enzyme)

=>_b_wpix

FILE 'WPIX' ENTERED AT 13:27:32 ON 27 DEC 2004
 COPYRIGHT (C) 2004 THE THOMSON CORPORATION

FILE LAST UPDATED: 23 DEC 2004 <20041223/UP>
 MOST RECENT DERWENT UPDATE: 200482 <200482/DW>
 DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

>>> FOR A COPY OF THE DERWENT WORLD PATENTS INDEX STN USER GUIDE,
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 FOR FURTHER DETAILS: <http://www.thomsonderwent.com/dwpifv> <<<

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>>> SMILES and ISOSMILES strings are no longer available as
 Derwent Chemistry Resource display fields <<<

=> d all 18

L8 ANSWER 1 OF 1 WPIX COPYRIGHT 2004 THE THOMSON CORP on STN
 AN 2002-454722 [48] WPIX
 DNC C2002-129343
 TI Use of mutated enzymes for chemically transforming compounds e.g. amine
 from ketone.
 DC B05 D16 E19
 IN ROZZELL, J D
 PA (ROZZ-I) ROZZELL J D; (BIOC-N) BIOCATALYTICS INC
 CYC 98
 PI WO 2002036742 A2 20020510 (200248)* EN 28 C12N000-00
 RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ
 NL OA PT SD SE SL SZ TR TZ UG ZW
 W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK
 DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR
 KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT
 RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
 US 2002061564 A1 20020523 (200248) C12P013-04 <--
 AU 2002032603 A 20020515 (200258) C12N000-00
 ADT WO 2002036742 A2 WO 2001-US48577 20011030; US-2002061564 A1 CIP of US
 2000-702421 20001031; Provisional-US-2001-288378P 20010503; US
 2001-39952 20011024; AU 2002032603 A AU 2002-32603 20011030
 FDT AU 2002032603 A Based on WO 2002036742
 PRAI US 2001-39952 20011024; US 2000-702421 20001031;
 US 2001-288378P 20010503
 IC ICM C12N000-00; C12P013-04
 AB WO 200236742 A UPAB: 20020730
 NOVELTY - Production of an amino acid, amine or an alcohol from a target
 (2-ketoacid (for amino acid) or ketone (for amine and alcohol)) involves
 creating a mutated enzyme that catalyzes the reductive amination or
 transamination of the target compounds or reduces the target ketone (for

the production of alcohol) to form the respective products.

USE - For the production of amino acids (preferably chiral), alcohols or amines (claimed) and for producing chiral intermediates useful in pharmaceutical and agricultural industries.

ADVANTAGE - The mutated enzyme catalyzes the reductive amination or transamination of the target compounds or reduces the target ketone (in the production of the alcohol) at a greater rate than the existing enzyme. By determining in which reaction the pH indicator undergoes a color change the enzymatic activities can be detected easily even in a high throughput format enabling more facile discovery of new enzymes, particularly oxidoreductases that catalyze useful redox reactions. The enzymes are easier to use and are more cost effective than performing an asymmetric synthesis and can perform chemical transformations exclusively forming one enantiomeric product.

Dwg.0/0

FS CPI

FA AB; DCN

MC CPI: B04-L03D; B04-L04; B10-B02; B10-B04; B10-E04; B11-A02; D05-A02;
E05-G03C; E10-B02D2; E10-B02D6; E10-B04C1

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L8 ANSWER 1 OF 1 WPIX COPYRIGHT 2004 THE THOMSON CORP on STN

M1 *01* DCN: RA1D77-K; RA1D77-C; RA1D77-P
M1 *02* DCN: RA05NL-K; RA05NL-C; RA05NL-P
M1 *03* DCN: RA1BQL-K; RA1BQL-C; RA1BQL-P
M1 *04* DCN: RA00GC-K; RA00GC-C; RA00GC-P
M2 *05* DCN: R16026-K; R16026-P
M2 *06* DCN: R04697-K; R04697-P
M2 *07* DCN: RA7GKR-K; RA7GKR-P
M2 *08* DCN: RA7GKV-K; RA7GKV-P
M2 *09* DCN: RA7GL1-K; RA7GL1-P
M2 *10* DCN: R13915-K; R13915-P
M2 *11* DCN: 0067-23202-K; 0067-23202-P
M2 *12* DCN: 0067-23203-K; 0067-23203-P
M2 *13* DCN: R01713-K; R01713-S
M2 *14* DCN: R22158-K; R22158-S
M2 *15* DCN: RA7GL5-K; RA7GL5-S
M2 *16* DCN: RA7GL6-K; RA7GL6-S
M2 *17* DCN: RA7GL7-K; RA7GL7-S
M2 *18* DCN: R00675-K; R00675-S
M2 *19* DCN: 0067-23201-K; 0067-23201-P
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M3 *17* DCN: RA7GL7-K; RA7GL7-S
M3 *18* DCN: R00675-K; R00675-S
M3 *19* DCN: 0067-23201-K; 0067-23201-P

=> b home

FILE 'HOME' ENTERED AT 13:28:00 ON 27 DEC 2004

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=> d his

(FILE 'HOME' ENTERED AT 13:25:27 ON 27 DEC 2004)

FILE 'HCAPLUS' ENTERED AT 13:25:31 ON 27 DEC 2004

L1 1 US20020061564/PN
E US2001-288378/AP, PRN
L2 1 US2001-288378P/AP, PRN
L3 1 L1-2

FILE 'REGISTRY' ENTERED AT 13:26:36 ON 27 DEC 2004

FILE 'HCAPLUS' ENTERED AT 13:26:37 ON 27 DEC 2004

L4 TRA L3 1- RN : 43 TERMS

FILE 'REGISTRY' ENTERED AT 13:26:37 ON 27 DEC 2004

L5 43 SEA L4

FILE 'WPIX' ENTERED AT 13:26:40 ON 27 DEC 2004

L6 1 US20020061564/PN
L7 1 US2001-288378P/AP, PRN
L8 1 L6-7

FILE 'HCAPLUS' ENTERED AT 13:32:09 ON 27 DEC 2004

E KETONE/CT
E KETONES/CT
L9 QUE KETONES+OLD, NT/CT OR KETONE#/CW
E ENZYMES/CT
L10 QUE ENZYME#/CW
E REDUCTIVE ANIMATION/CT
E E1+ALL
E ANINMATION/CT
E ANIMATION/CT
E AMINATION/CT
E E3+ALL
L11 9899 AMINATION+NT/CT
E ADDITION REACTION/CT
E E3+ALL
L12 57 ADDITION REACTION+OLD, NT/CT (L) (SHARPLESS OR AMINOHYDROXYL?)
E TRANAMINAT/CT
E TRANSAMINATION/CT
E E3+ALL
L13 730 TRANSAMINATION/CT
E AMINES/CT
L14 126596 AMINE#/CW
L15 161816 L9 (L) RACT+NT/RL
L16 11294 L14 (L) PREP+NT/RL
L17 4045 L10 (L) CAT/RL
L18 2 L15 AND L16 AND L17
E ROZZELL D/AU
L19 74 E4-10
L20 33 BIOCATALYT?/CS, PA
L21 1 L18 AND L19
L22 1 L18 AND L20
L23 1 L21-22
L24 1 L18 NOT L23
L25 1644 L11-12 (L) REDUCT?
L26 0 L25 AND L24
L27 5 L15 AND L16 AND L10
L28 1 L27 AND L19-20
L29 4 L27 NOT L28
SEL AN 3-4
L30 2 E1-4 AND L29
L31 2 L24 OR L30

FILE 'WPIX' ENTERED AT 16:28:15 ON 27 DEC 2004

L32 32800 C07C049/IPC OR (B10-F? OR C10-F? OR E10-F?)/MC
L33 QUE C07C209/IPC OR (B10-B? OR C10-B? OR E10-B?)/MC OR (H1? OR H
L34 58177 (B04-L? OR C04-L? OR B04-B02C? OR C04-B02C?)/MC OR V80?/M0, M1, M
L35 392 (E11-F07A OR N07-D08A)/MC
L36 9657 (B11-A02 OR C11-A02 OR B11-A OR C11-A)/MC
L37 2596 L34 AND L36
E ROZZELL J/AU
E ROZZELL D/AU
L38 29 E3-6

Search done by Noble Jarrell

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L39      14 BIOCATALYT?/CS,PA
L40      1 L37 AND L38=39
L41      2595 L37 NOT L40
L42      15 L41 AND L32
L43      5 L42 AND L33
L44      1 L41 AND L35
          SEL AN L43 5
L45      1 E1 AND L43

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FILE 'EMBASE' ENTERED AT 16:43:02 ON 27 DEC 2004

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          E E3+ALL
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          E AMINE/CT
          E E3+ALL
L47      216046 AMINE+NT/CT
          E ENZYME/CT
          E E3+ALL
L48      QUE ENZYME+NT/CT
          E AMINATION//CT
          E E2+ALL
          E E2+ALL
L49      1368 AMINATION/CT
          E TRANSAMINAT/CT
          E E4+ALL
L50      562 TRANSAMINATION/CT
          E ENZYME CAT/CT
          E E9+ALL
          E E2
          E E3+ALL
L51      15037 ENZYME MECHANISM/CT
L52      18766 L46 AND L47
L53      57 L49 AND L52
L54      1 L53 AND L51
L55      5 L52 AND L50
L56      7 (L53 OR L55) AND (L48 OR L51)
L57      7 L54 OR L56
          SEL AN 2-5 7 L57
L58      5 E1-5
L59      2 L58 AND PY<=2001

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=> b hcap

FILE 'HCAPLUS' ENTERED AT 16:58:10 ON 27 DEC 2004
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FILE COVERS 1907 - 27 Dec 2004 VOL 142 ISS 1
 FILE LAST UPDATED: 24 Dec 2004 (20041224/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d all 123 tot

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L23      ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2004 ACS on STN
AN       2002:353585 HCAPLUS
DN       136:352318
ED       Entered STN: 12 May 2002
TI       Method for chemical transformation using a mutated enzyme
IN       Rozzell, J. David, Jr.
PA       Biocatalytics, Inc., USA
SO       PCT Int. Appl., 28 pp.
          CODEN: PIXXD2

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Search done by Noble Jarrell

DT Patent
 LA English
 IC C12N
 CC 9-16 (Biochemical Methods)
 Section cross-reference(s): 6, 7

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002036742	A2	20020510	WO 2001-US48577	20011030
	WO 2002036742	A3	20030821		
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
	US 2002061564	A1	20020523	US 2001-39952	20011024
	AU 2002032603	A5	20020515	AU 2002-32603	20011030
PRAI	US 2000-702421	A	20001031		
	US 2001-288378P	P	20010503		
	US 2001-39952	A	20011024		
	WO 2001-US48577	W	20011030		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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WO 2002036742	IC	C12N
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AB The invention concerns methods for chemical transforming compds. using a mutated enzyme are provided, and more particularly a method for the production of an amino acid from a target 2-ketoacid, the production of an amine from a target ketone and the production of an alc. from a target ketone. The methods comprise creating a mutated enzyme that catalyzes the reductive amination or transamination of the target 2-ketoacid or ketone or the reduction of the ketone and providing the mutated enzyme in a reaction mixture comprising the target 2-ketoacid or ketone under conditions sufficient to permit the formation of the desired amino acid, amine or alc. to thereby produce the amino acid, amine or alc.

ST enzyme mutated chem transformation amino acid alc ketone amination

IT Gene, microbial

RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)

(YPR1; method for chemical transformation using a mutated enzyme)

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Optical detectors

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Reduction

Transamination

pH

(method for chemical transformation using a mutated enzyme)

IT Enzymes, uses

RL: CAT (Catalyst use); PRP (Properties); USES (Uses)

(method for chemical transformation using a mutated enzyme)

IT Ketones, reactions

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)

(method for chemical transformation using a mutated enzyme)

IT Alcohols, preparation

Amines, preparation

Amino acids, preparation

RL: SPN (Synthetic preparation); PREP (Preparation)

(method for chemical transformation using a mutated enzyme)

IT Amination

(reductive; method for chemical transformation using a mutated enzyme)

IT 9031-72-5, Alcohol dehydrogenase

RL: CAT (Catalyst use); PRP (Properties); USES (Uses)

(YPR1; method for chemical transformation using a mutated enzyme)

IT 98-92-0, Nicotinamide

RL: NUU (Other use, unclassified); USES (Uses)

(cofactor; method for chemical transformation using a mutated enzyme)

IT 9000-97-9 9054-65-3, Branched-chain amino acid transaminase 9082-71-7,

Leucine dehydrogenase 37332-38-0, Aromatic amino acid transaminase
 53414-75-8, Amino acid dehydrogenase 69403-12-9, Phenylalanine
 dehydrogenase 77106-95-7, Ketoreductase
 RL: CAT (Catalyst use); PRP (Properties); USES (Uses)
 (method for chemical transformation using a mutated enzyme)

IT 556-02-5, D-Tyrosine 607-97-6, Ethyl 2-ethyl-3-ketobutyrate 610-89-9
 620-79-1 638-07-3 815-17-8 943-73-7 1655-07-8,
 Ethylcyclohexanone-2-carboxylate 5413-05-8 6270-17-3 14397-64-9
 20859-02-3, L-tert-Leucine 26782-71-8, D-tert-Leucine 34906-87-1
 35597-44-5, S-Phosphinothricin 58438-03-2 62741-58-6 64920-29-2
 111726-64-8 418767-58-5
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical
 process); PRP (Properties); PROC (Process)
 (method for chemical transformation using a mutated enzyme)

IT 98-86-2, Acetophenone, reactions 99-91-2,
 p-Chloroacetophenone 2142-63-4, m-Bromoacetophenone
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical
 process); PRP (Properties); RCT (Reactant); PROC (Process);
 RACT (Reactant or reagent)
 (method for chemical transformation using a mutated enzyme)

IT 70-11-1P, Bromoacetophenone 98-85-1P, 1-Phenylethanol 532-27-4P,
 Chloroacetophenone 618-36-0P, 1-Phenylethylamine 2627-86-3P,
 S-1-Phenylethylamine 3886-69-9P 4187-56-8P, S-1-(p-
 Chlorophenyl)ethylamine 27298-99-3P 139305-96-7P 176707-77-0P
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical
 process); PRP (Properties); SPN (Synthetic preparation); PREP
 (Preparation); PROC (Process)
 (method for chemical transformation using a mutated enzyme)

IT 7664-41-7, Ammonia, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (method for chemical transformation using a mutated enzyme)

=> d all 131 tot

L31 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2000:384565 HCAPLUS
 DN 133:28236
 ED Entered STN: 09 Jun 2000
 TI Methods and compositions for performing an array of chemical reactions on
 a support surface
 IN Zebala, John A.
 PA Syntrix Biochip, Inc., USA
 SO PCT Int. Appl., 157 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM G01N033-68
 CC 9-1 (Biochemical Methods)
 Section cross-reference(s): 1, 3, 26, 33, 80

FAN.CNT 4

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000033084	A2	20000608	WO 1999-US28021	19991123
WO 2000033084	A3	20000810		
W:	AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
AU 2000018317	A5	20000619	AU 2000-18317	19991123
EP 1163374	A2	20011219	EP 1999-961813	19991123
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO			
JP 2002531470	T2	20020924	JP 2000-585669	19991123
PRAI US 1998-110527P	P	19981201		
US 1999-326479	A	19990604		
WO 1999-US28021	W	19991123		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2000033084	ICM	G01N033-68

WO 2000033084 ECLA B01J019/00C; C07B061/00L; C07K001/04C; C07K014/00B1

AB Compns. and methods are provided for performing regionally selective solid-phase chemical synthesis of organic compds. Such methods may employ solvent-resistant photoresist compns. to prepare arrays of organic compds., such as ligands, for use within a variety of diagnostic and drug discovery assays. Ligand-arrays may comprise, for example, nucleobase polymers that are resistant to degradative enzymes. DNA probes and enalaprilat analogs were synthesized on glass slides using a photoresist method and used in hybridization assays and ACE inhibitory activity screening.

ST support array chem reaction photoresist; ligand array; DNA hybridization immobilized probe; ACE inhibitor screening enalaprilat analog solid phase synthesis; nucleic acid array

IT Gene, animal
 RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
 (BRCA1, of human, probe complementary to; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Gene, animal
 RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
 (BRCA2, of human, probe complementary to; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Gene, animal
 RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
 (CFTR, of human, probe complementary to; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Nucleic acid hybridization
 (DNA-DNA; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Gene, animal
 RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
 (TP53, of human, probe complementary to; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Silanes
 RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
 (alkoxy, as linkers; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Leukocyte
 (antigen of, of human, probe complementary to; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Polyamides, preparation
 RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (as photoresists; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Glass, reactions
 RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
 (as substrate; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Acid halides
 RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (chlorides, diacid, condensates with diamines, as photoresists; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Cell
 Cell membrane
 Organelle
 (compds. binding to, identification of; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Antibodies
 Enzymes, uses
 RL: CAT (Catalyst use); DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (compds. binding to, identification of; methods and compns. for performing arrays of chemical reactions on support surfaces using

photoresists)

IT Agglutinins and Lectins
Carbohydrates, uses
Polysaccharides, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(compds. binding to, identification of; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Phenolic resins, uses
RL: NUU (Other use, unclassified); USES (Uses)
(compds., in photoresists; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Amines, preparation
RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(diamines, condensates with phenylenediamine and diacid chloride mixture, as photoresists; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Quinones
RL: NUU (Other use, unclassified); USES (Uses)
(diazo-, in photoresists; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Metal alkoxides
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(hydrolyzed, polymers of, on surface; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Polymers, uses
RL: NUU (Other use, unclassified); USES (Uses)
(in photoresists; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Receptors
RL: ARG (Analytical reagent use); PEP (Physical, engineering or chemical process); RCT (Reactant); ANST (Analytical study); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(ligand analogs binding to; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Acids, uses
RL: NUU (Other use, unclassified); USES (Uses)
(linkers cleavable by; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Coating materials
(masking; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Adhesives
Analysis
Chromatography
DNA sequence analysis
Diagnosis
Drug screening
Electrophoresis
Human immunodeficiency virus
Indicators
Mass spectrometry
NMR spectroscopy
Negative photoresists
Nucleic acid hybridization
PCR (polymerase chain reaction)
Photoresists
Positive photoresists
Protein sequence analysis
RNA sequence analysis
Radiation
Reactors
Solvents
Surface
Synthesis
(methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Probes (nucleic acid)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Ligands

RL: ARG (Analytical reagent use); DEV (Device component use); PEP (Physical, engineering or chemical process); RCT (Reactant); ANST (Analytical study); PROC (Process); RACT (Reactant or reagent); USES (Uses)

(methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Peptide nucleic acids

RL: ARG (Analytical reagent use); DEV (Device component use); PEP (Physical, engineering or chemical process); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); PROC (Process); RACT (Reactant or reagent); USES (Uses)

(methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Nucleic acids

Polynucleotides

Proteins, general, reactions

Reagents

RL: ARG (Analytical reagent use); DEV (Device component use); RCT (Reactant); ANST (Analytical study); RACT (Reactant or reagent); USES (Uses)

(methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Antisense oligonucleotides

Organic compounds, reactions

RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)

(methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Adsorption

(mols. attachment to surface by; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Peptides, reactions

RL: ARG (Analytical reagent use); DEV (Device component use); PEP (Physical, engineering or chemical process); RCT (Reactant); ANST (Analytical study); PROC (Process); RACT (Reactant or reagent); USES (Uses)

(nucleic acid mimics; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Antigens

RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)

(of leukocyte, of human, probe complementary to; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Particles

(of metal oxide, gelled network of, on surface; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Genetic polymorphism

(of single nucleotide of human, probe complementary to; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Oxides (inorganic), reactions

RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)

(particles, gelled network of, on surface; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Materials

(photoactive chems., as linkers; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Microscopes

(slides; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT 51-20-7, 5-Bromouracil 51-21-8, 5-Fluorouracil 58-63-9, Inosine
65-71-4, Thymine 66-22-8, Uracil, uses 66-22-8D, Uracil, pseudo-,
derivs., uses 68-94-0, Hypoxanthine 69-89-6, Xanthine 71-30-7,
Cytosine 73-24-5, Adenine, uses 73-40-5, Guanine 141-90-2,
Thiouracil 333-49-3, 2-Thiocytosine 443-72-1 504-07-4, Dihydrouracil
554-01-8, 5-Methylcytosine 578-76-7, 7-Methylguanine 591-28-6,
4-Thiouracil 636-26-0, 5-Methyl-2-thiouracil 696-07-1, 5-Iodouracil
938-85-2, 1-Methylguanine 1445-08-5, 2-Methyladenine 1445-15-4
1500-85-2, 7-Deazaadenine 1820-81-1, 5-Chlorouracil 1904-98-9,
2,6-Diaminopurine 2140-73-0, 1-Methylinosine 2365-40-4,
N6-Isopentenyladenine 4776-08-3, 3-Methylcytosine 5142-22-3,
1-Methyladenine 6623-81-0, 5-Methoxyuracil 7355-55-7, 7-Deazaguanine

10030-78-1 14631-20-0 14886-75-0 20758-33-2 31458-37-4
 72704-66-6 273752-46-8 273752-47-9 273752-48-0 273752-50-4
 273752-52-6

RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (array of nucleobase polymers containing; methods and compns. for
 performing arrays of chemical reactions on support surfaces using
 photoresists)

IT 82601-53-4, AZ 351

RL: NUU (Other use, unclassified); USES (Uses)
 (as developer; methods and compns. for performing arrays of chemical
 reactions on support surfaces using photoresists)

IT 76390-92-6P 273752-64-0P 273752-65-1P 273752-66-2P 273752-67-3P
 273752-68-4P 273752-69-5P 273752-70-8P 273935-21-0P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological
 study, unclassified); SPN (Synthetic preparation); BIOL (Biological
 study); PREP (Preparation)

(as enalaprilat analog, ACE inhibitory activity of; methods and compns.
 for performing arrays of chemical reactions on support surfaces using
 photoresists)

IT 64967-39-1

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (as indicator with angiotensin converting enzyme; methods and compns.
 for performing arrays of chemical reactions on support surfaces using
 photoresists)

IT 101268-32-0 134978-97-5

RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or
 reagent); USES (Uses)

(as linkers; methods and compns. for performing arrays of chemical
 reactions on support surfaces using photoresists)

IT 273752-54-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)

(as photoactive polyamide; methods and compns. for performing arrays of
 chemical reactions on support surfaces using photoresists)

IT 99-63-8DP, Isophthaloyl chloride, mixture with diacid chloride, condensates
 with diamines 100-20-9DP, Terephthaloyl chloride, mixture with
 isophthaloyl chloride, condensates with diamines 106-50-3DP,
 1,4-Phenylenediamine, condensates with diamine and diacid chloride mixture
 108-45-2DP, 1,3-Phenylenediamine, condensates with diamine and diacid
 chloride mixture 2784-96-5DP, condensates with phenylenediamine and diacid
 chloride mixture 81871-61-6DP, condensates with phenylenediamine and
 diacid chloride mixture

RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP
 (Preparation); USES (Uses)

(as photoresists; methods and compns. for performing arrays of chemical
 reactions on support surfaces using photoresists)

IT 126039-24-5, AZ 1512

RL: NUU (Other use, unclassified); USES (Uses)
 (as pos. photoresist; methods and compns. for performing arrays of
 chemical reactions on support surfaces using photoresists)

IT 9015-82-1, Angiotensin-converting enzyme

RL: CAT (Catalyst use); DEV (Device component use); PEP (Physical,
 engineering or chemical process); PROC (Process); USES (Uses)

(compds. binding to, identification of; methods and compns. for
 performing arrays of chemical reactions on support surfaces using
 photoresists)

IT 76-05-1, Trifluoroacetic acid, uses 7664-41-7, Ammonia, uses

RL: NUU (Other use, unclassified); USES (Uses)
 (for detachment of compds.; methods and compns. for performing arrays
 of chemical reactions on support surfaces using photoresists)

IT 9001-24-5, Blood-coagulation factor V

RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL
 (Biological study); PROC (Process)

(human gene for, probe complementary to; methods and compns. for
 performing arrays of chemical reactions on support surfaces using
 photoresists)

IT 9003-35-4D, compds.

RL: NUU (Other use, unclassified); USES (Uses)
 (in photoresists; methods and compns. for performing arrays of chemical
 reactions on support surfaces using photoresists)

IT 156-06-9, Phenylpyruvic acid 328-50-7, 2-Ketoglutaric
 acid 5461-32-5, 2-Nitrophenylpyruvic acid

RL: RCT (Reactant); RACT (Reactant or reagent)

(in preparation of enalaprilat analog on solid phase; methods and compns.
 for performing arrays of chemical reactions on support surfaces using
 photoresists)

IT 76420-72-9D, Enalaprilat, analogs
 RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
 (methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT 7631-86-9, Silica, uses
 RL: DEV (Device component use); USES (Uses)
 (methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT 78-10-4D, Tetraethoxysilane, hydrolyzed, on surface
 RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
 (methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT 68-12-2, Dimethylformamide, uses 127-19-5, Dimethylacetamide 872-50-4, N-Methylpyrrolidone, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT 78-10-4, Tetraethoxysilane 919-30-2 166108-71-0
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT 9001-92-7, Protease
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
 (organic compds. resistant to; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT 9026-81-7, Nuclease
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
 (polynucleotides resistant to; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT 273752-55-9DP, immobilized 273752-56-0DP, immobilized 273752-57-1DP, immobilized 273752-58-2DP, immobilized 273752-59-3DP, immobilized 273752-60-6DP, immobilized 273752-61-7DP, immobilized 273752-62-8DP, immobilized 273752-63-9DP, immobilized
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent); USES (Uses)
 (preparation and detachment of; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

L31 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2000:335530 HCAPLUS
 DN 132:344868
 ED Entered STN: 19 May 2000
 TI Chemically modified mutant serine hydrolases show improved catalytic activity and chiral selectivity
 IN Jones, John Bryan; Dickman, Michael
 PA Genencor International, Inc., USA
 SO PCT Int. Appl., 68 pp.
 CODEN: PIXXD2

DT Patent
 LA English
 IC ICM C12N009-54
 ICS C12P021-00; C12P041-00
 CC 7-3 (Enzymes)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000028007	A2	20000518	WO 1999-US26586	19991109
WO 2000028007	A3	20000727		
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2348014	AA	20000518	CA 1999-2348014	19991109
EP 1129180	A2	20010905	EP 1999-964973	19991109
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				

	JP 2002529078	T2	20020910	JP 2000-581174	19991109
	AU 772427	B2	20040429	AU 2000-30990	19991109
PRAI	US 1998-107758P	P	19981110		
	US 1998-113061P	P	19981221		
	WO 1999-US26586	W	19991109		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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WO 2000028007	ICM	C12N009-54
	ICS	C12P021-00; C12P041-00
WO 2000028007	ECLA	C12N009/54

AB This invention provides novel chemical modified mutant serine hydrolases that catalyze a transamidation and/or a transpeptidation and/or a transesterification reaction. The modified serine hydrolases have one or more amino acid residues in a subsite replaced with a cysteine, wherein the cysteine is modified by replacing the thiol hydrogen in the cysteine with a substituent group providing a thiol side chain comprising a moiety selected from the group consisting of a polar aromatic substituent, an alkyl amino group with a pos. charge, and a glycoside. In particularly preferred embodiments, the substituents include an oxazolidinone, a C1-C15 alkyl amino group with a pos. charge, or a glycoside. Thus, covalent modification of *Bacillus lentus* subtilisin cysteine mutants with mandelate-based, oxazolidinone-based, or indanol-based chiral ligands causes remarkable changes in activity and specificity.

ST serine hydrolase cysteine mutant modification stereoselectivity;
subtilisin cysteine mutant modification stereoselectivity

IT Alcohols, preparation
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(aliphatic, stereoresoln. of; chemical modified mutant serine hydrolases show improved catalytic activity and chiral selectivity)

IT Carboxylic acids, preparation
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(alkyl esters, stereoresoln. of; chemical modified mutant serine hydrolases show improved catalytic activity and chiral selectivity)

IT Esters, preparation
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(aralkyl, stereoresoln. of; chemical modified mutant serine hydrolases show improved catalytic activity and chiral selectivity)

IT Asymmetric synthesis and induction
Enzyme kinetics
Michaelis constant
Stereochemistry
(chemical modified mutant serine hydrolases show improved catalytic activity and chiral selectivity)

IT Carboxylic acids, preparation
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(esters, stereoresoln. of; chemical modified mutant serine hydrolases show improved catalytic activity and chiral selectivity)

IT Carboxylic acids, preparation
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(haloalkyl, stereoresoln. of; chemical modified mutant serine hydrolases show improved catalytic activity and chiral selectivity)

IT Aromatic compounds
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); CAT (Catalyst use); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(polar, reaction products; chemical modified mutant serine hydrolases show improved catalytic activity and chiral selectivity)

IT Alcohols, preparation
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(primary, stereoresoln. of; chemical modified mutant serine hydrolases show improved catalytic activity and chiral selectivity)

IT Amines, biological studies
Disaccharides
Glycosides
Heterocyclic compounds
Monosaccharides
Oligosaccharides, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); CAT (Catalyst use); SPN (Synthetic

preparation); BIOL (Biological study); PREP (Preparation);
 USES (Uses)
 (reaction products; chemical modified mutant serine hydrolases show improved catalytic activity and chiral selectivity)

IT Alcohols, preparation
 RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
 (secondary, stereoresoln. of; chemical modified mutant serine hydrolases show improved catalytic activity and chiral selectivity)

IT Phenols, preparation
 RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
 (stereoresoln. of; chemical modified mutant serine hydrolases show improved catalytic activity and chiral selectivity)

IT 9004-07-3DP, Chymotrypsin, cysteine-substituted derivs. 9014-01-1DP, Subtilisin, cysteine-substituted derivs. 37259-58-8DP, Serine proteinase, cysteine-substituted derivs. 89410-68-4DP, reaction product with cysteine-substituted subtilisin 111536-42-6DP, reaction product with cysteine-substituted subtilisin 269401-46-9DP, reaction product with cysteine-substituted subtilisin 269401-47-0DP, reaction product with cysteine-substituted subtilisin 269401-51-6DP, reaction product with cysteine-substituted subtilisin 269401-52-7DP, reaction product with cysteine-substituted subtilisin 269401-53-8DP, reaction product with cysteine-substituted subtilisin 269401-54-9DP, reaction product with cysteine-substituted subtilisin 269401-55-0DP, reaction product with cysteine-substituted subtilisin 269401-56-1DP, reaction product with cysteine-substituted subtilisin 269401-57-2DP, reaction product with cysteine-substituted subtilisin 269401-58-3DP, reaction product with cysteine-substituted subtilisin 269401-59-4DP, reaction product with cysteine-substituted subtilisin 269401-60-7DP, reaction product with cysteine-substituted subtilisin 269401-61-8DP, reaction product with cysteine-substituted subtilisin 269401-62-9DP, reaction product with cysteine-substituted subtilisin 269401-64-1DP, reaction product with cysteine-substituted subtilisin 269401-65-2DP, reaction product with cysteine-substituted subtilisin 269401-66-3DP, reaction product with cysteine-substituted subtilisin 269402-08-6DP, reaction product with cysteine-substituted subtilisin 269402-11-1DP, reaction product with cysteine-substituted subtilisin 269402-15-5DP, reaction product with cysteine-substituted subtilisin 269402-17-7DP, reaction product with cysteine-substituted subtilisin 269402-19-9DP, reaction product with cysteine-substituted subtilisin 269402-21-3DP, reaction product with cysteine-substituted subtilisin 269402-23-5DP, reaction product with cysteine-substituted subtilisin 269402-25-7DP, reaction product with cysteine-substituted subtilisin 269402-27-9DP, reaction product with cysteine-substituted subtilisin 269402-29-1DP, reaction product with cysteine-substituted subtilisin 269402-31-5DP, reaction product with cysteine-substituted subtilisin 269402-33-7DP, reaction product with cysteine-substituted subtilisin
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); CAT (Catalyst use); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
 (chemical modified mutant serine hydrolases show improved catalytic activity and chiral selectivity)

IT 105-30-6, 2-Methyl-1-pentanol 123-96-6, 2-Octanol 1123-85-9, 2-Phenyl-1-propanol
 RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
 (chemical modified mutant serine hydrolases show improved catalytic activity and chiral selectivity)

IT 77-76-9, 2,2-Dimethoxypropane 109-64-8, 1,3-Dibromopropane 497-25-6, 2-Oxazolidinone 611-71-2, R-Mandelic acid 17016-83-0, S-4-Isopropyl-2-oxazolidinone 17199-29-0, S-Mandelic acid 90319-52-1, R-4-Phenyl-2-oxazolidinone 90719-32-7, (S)-4-Benzyl-2-oxazolidinone 95530-58-8, R-4-Isopropyl-2-oxazolidinone 99395-88-7, S-4-Phenyl-2-oxazolidinone 102029-44-7, (R)-4-Benzyl-2-oxazolidinone 126456-43-7 136030-00-7
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (chemical modified mutant serine hydrolases show improved catalytic activity and chiral selectivity)

IT 3966-32-3P 17628-72-7P 20698-91-3P, R-Methylmandelate 21210-43-5P, S-Methylmandelate 22810-55-5P 26164-26-1P 42351-29-1P 66051-01-2P 105581-83-7P 135969-64-1P 135969-65-2P 169220-96-6P 211614-43-6P 269401-44-7P 269401-45-8P 269401-46-9P 269401-47-0P 269401-48-1P 269401-49-2P 269401-50-5P 269401-51-6P 269401-52-7P 269401-53-8P 269401-54-9P 269401-55-0P 269401-56-1P 269401-57-2P 269401-58-3P 269401-59-4P 269401-60-7P 269401-61-8P 269401-62-9P 269401-64-1P

269401-65-2P 269401-66-3P 269401-67-4P 269401-72-1P 269401-74-3P
 269401-76-5P 269401-79-8P 269401-81-2P 269401-83-4P 269401-85-6P
 269401-87-8P 269401-89-0P 269401-91-4P 269401-93-6P 269401-95-8P
 269401-97-0P 269402-01-9P 269402-06-4P 269402-51-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)

(chemical modified mutant serine hydrolases show improved catalytic
 activity and chiral selectivity)

=>-b-wpix-

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L40 ANSWER 1 OF 1 WPIX COPYRIGHT 2004 THE THOMSON CORP on STN
 AN 2002-454722 [48] WPIX
 DNC C2002-129343
 TI Use of mutated enzymes for chemically transforming compounds e.g. amine
 from ketone.
 DC B05 D16 E19
 IN ROZZELL, J D
 PA (ROZZ-I) ROZZELL J D; (BIOC-N) BIOCATALYTICS INC
 CYC 98
 PI WO 2002036742 A2 20020510 (200248)* EN 28 C12N000-00
 RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ
 NL OA PT SD SE SL SZ TR TZ UG ZW
 W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK
 DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR
 KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT
 RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
 US 2002061564 A1 20020523 (200248) C12P013-04
 AU 2002032603 A 20020515 (200258) C12N000-00
 ADT WO 2002036742 A2 WO 2001-US48577 20011030; US 2002061564 A1 CIP of US
 2000-702421 20001031, Provisional US 2001-288378P 20010503, US 2001-39952
 20011024; AU 2002032603 A AU 2002-32603 20011030
 FDT AU 2002032603 A Based on WO 2002036742
 PRAI US 2001-39952 20011024; US 2000-702421 20001031;
 US 2001-288378P 20010503
 IC ICM C12N000-00; C12P013-04
 AB WO 200236742 A UPAB: 20020730
 NOVELTY - Production of an amino acid, amine or an alcohol from a target
 (2-ketoacid (for amino acid) or ketone (for amine and alcohol)) involves
 creating a mutated enzyme that catalyzes the reductive amination or
 transamination of the target compounds or reduces the target ketone (for
 the production of alcohol) to form the respective products.
 USE - For the production of amino acids (preferably chiral), alcohols
 or amines (claimed) and for producing chiral intermediates useful in
 pharmaceutical and agricultural industries.

ADVANTAGE - The mutated enzyme catalyzes the reductive amination or transamination of the target compounds or reduces the target ketone (in the production of the alcohol) at a greater rate than the existing enzyme. By determining in which reaction the pH indicator undergoes a color change the enzymatic activities can be detected easily even in a high throughput format enabling more facile discovery of new enzymes, particularly oxidoreductases that catalyze useful redox reactions. The enzymes are easier to use and are more cost effective than performing an asymmetric synthesis and can perform chemical transformations exclusively forming one enantiomeric product.

Dwg.0/0

FS CPI

FA AB; DCN

MC CPI: B04-L03D; B04-L04; B10-B02; B10-B04; B10-E04;
B11-A02; D05-A02; E05-G03C; E10-B02D2; E10-B02D6; E10-B04C1

=> d all 145 tot

L45 ANSWER 1 OF 1 WPIX COPYRIGHT 2004 THE THOMSON CORP on STN

AN 1995-060990 [08] WPIX

DNC C1995-027149

TI Enzymatic oxidn of substrates - using laccase-type enzymes, with aromatic cpd as enhancer.

DC A11 B07 D15 D16 D25 E19 F09

IN PEDERSEN, A H; SCHNEIDER, P; PEDERSEN, A

PA (NOVO) NOVO-NORDISK AS; (NOVO) NOVOZYMES AS

CYC 48

PI WO 9501426 A1 19950112 (199508)* EN 78 C12N009-02
RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL OA PT SE
W: AU BB BG BR BY CA CN CZ FI HU JP KP KR KZ LK LV MG MN MW NO NZ PL
RO RU SD SK UA US UZ VN

AU 9469245 A 19950124 (199520) C12N009-02

BR 9406868 A 19960326 (199619) C12N009-02

FI 9506329 A 19960223 (199620) C12N000-00

EP 707637 A1 19960424 (199621) EN C12N009-02

R: AT BE CH DE DK ES FR GB GR IE IT LI LU NL PT SE

JP 08511943 W 19961217 (199710) 76 C12N009-02

AU 681408 B 19970828 (199743) C12N009-02

CN 1126490 A 19960710 (199749) C12N009-02

US 5795855 A 19980818 (199840) C11D003-386

US 5885304 A 19990323 (199919) C11D003-396

CN 1319657 A 20011031 (200215) C12N009-02

KR 336177 B 20021004 (200324) C12N009-02

ADT WO 9501426 A1 WO 1994-DK210 19940531; AU 9469245 A AU 1994-69245 19940531;
BR 9406868 A BR 1994-6868 19940531; WO 1994-DK210 19940531; FI 9506329 A
WO 1994-DK210 19940531; FI 1995-6329 19951229; EP 707637 A1 EP 1994-917571
19940531; WO 1994-DK210 19940531; JP 08511943 W WO 1994-DK210 19940531; JP
1995-503221 19940531; AU 681408 B AU 1994-69245 19940531; CN 1126490 A CN
1994-192635 19940531; US 5795855 A WO 1994-DK210 19940531; US 1995-569101
19951221; US 5885304 A Div ex WO 1994-DK210 19940531, Div ex US
1995-569101 19951221, US 1997-843534 19970416; CN 1319657 A Div ex CN
1994-192635 19940531, CN 2000-130932 19940531; KR 336177 B WO 1994-DK210
19940531, KR 1995-705998 19951229

FDT AU 9469245 A Based on WO 9501426; BR 9406868 A Based on WO 9501426; EP
707637 A1 Based on WO 9501426; JP 08511943 W Based on WO 9501426; AU
681408 B Previous Publ. AU 9469245, Based on WO 9501426; US 5795855 A
Based on WO 9501426; KR 336177 B Previous Publ. KR 96703431, Based on WO
9501426

PRAI DK 1993-773 19930629

REP WO 9105839; WO 9220857

IC ICM C11D003-386; C11D003-396; C12N000-00; C12N009-02

ICS C11D003-20; C11D003-26; C11D003-34; C11D003-393; C11D003-395;
D06L001-00; D06L003-02; D06L003-11; D21C009-10

AB WO 9501426 A UPAB: 19960428

Substrates are oxidised with an enzyme (I) in the presence of an enhancing agent (II). (I) is laccase, catechol oxidase, monophenol monooxygenase, and bilirubin oxidase. (II) contains at least 2 aromatic rings (which may be used), at least 1 of which is substd. by 1 or more N,O and S atoms.

The laccase-(I) are derived from Trametes (e.g, T. versicolor or T.villosa), Collybia, Fomes, Lentinus, Pleurotus, etc.

USE - Used in bleaching of dyes in solution, inhibiting the transfer of textile dyes from a dyed fabric to another fabric when these are washed together in a wash liquid, bleaching of lignin-containing material (esp bleaching of pulp for paper production), treatment of waste H2O from pulp and dye manufacturing and the textile industry, and enzymatic polymerisation

and/or modification of lignin materials (especially the manufacture of wood composites including chipboards, fibre boards, and particle boards, or in the preparation of laminated wood prods. e.g. beams and plywood).

ADVANTAGE - The cpds. (II) effectively enhance the activity of the enzymes (I).

Dwg.0/2

FS CPI

FA AB; DCN

MC CPI: A03-C02; A08-M08; A10-E11; B04-L03A; B04-L03C;
B05-B01D; B05-B01E; B05-B01F; B05-B01J; B05-B01K; B05-B01M; B05-B01N;
B06-H; B07-D03; B07-D05; B07-D11; B08-D01; B08-D02; B08-D03; B10-A08;
B10-A09B; B10-A12C; B10-A13D; B10-A16; B10-A17; B10-A18; B10-A19;
B10-A20; B10-A24; B10-B01; B10-B02;
B10-B03; B10-B04; B10-C02; B10-C03; B10-C04B;
B10-C04C; B10-D01; B10-D03; B10-E02; B10-E04B; B10-F02;
B10-G03; B10-H01; B10-J02; B11-A02; D04-A01J; D05-C03B;
D11-B01A; D11-B02; E06-H; E07-H04; F03-J03; F05-A02B; F05-A07; F05-B

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AN 2001190289 EMBASE

TI Dopa decarboxylase exhibits low pH half-transaminase and high pH oxidative deaminase activities toward serotonin (5-hydroxytryptamine).

AU Bertoldi M.; Borri Voltattorni C.

CS Dr. C. Borri Voltattorni, Dipto. di Sci. Neurol. e della Vis., Facolta di Medicina e Chirurgia, Universita degli Studi di Verona, Strada Le Grazie, 8, 37134 Verona, Italy. carla.borri@univr.it

SO Protein Science, (2001) 10/6 (1178-1186).

Refs: 22

ISSN: 0961-8368 CODEN: PRCIEI

CY United States

DT Journal; Article

FS 029 Clinical Biochemistry

LA English

SL English

AB Dopa decarboxylase (DDC) catalyzes not only the decarboxylation of L-aromatic amino acids but also side reactions including half-transamination of D-aromatic amino acids and oxidative deamination of aromatic amines. The latter reaction produces, in equivalent amounts, an aromatic aldehyde or ketone (depending on the nature of the substrate), and ammonia, accompanied by O(2) consumption in a 1 : 2 molar ratio with respect to the products. The kinetic mechanism and the pH dependence of the kinetic parameters have been determined in order to obtain information on the chemical mechanism for this reaction toward 5-hydroxytryptamine (5-HT). The initial velocity studies indicate that 5-HT and O(2) bind to the enzyme sequentially, and that D-Dopa is a competitive inhibitor versus 5-HT and a noncompetitive inhibitor versus O(2). The results are consistent with a mechanism in which 5-HT binds to DDC before O(2). The pH dependency of log V for the oxidative deaminase reaction shows that the enzyme possesses a single ionizing group with a pK value of .apprx.7.8 that must be unprotonated for catalysis. In addition to an ionizing residue with a pK value of 7.9 similar to that found in the V profile, the (V/K) (5-HT) profile exhibits a pK value of 9.8, identical to that of free substrate. This pK was therefore tentatively assigned to the .alpha.-amino group of 5-HT. No titrable ionizing residue was detected in the (V/K) (O2) profile, in the pH range examined. Surprisingly, at pH values lower than 7, where oxidative deamination does not occur to a significant extent, a half-transamination of 5-HT takes place. The rate constant of pyridoxamine 5'-phosphate formation increases below a single pK of .apprx.6.7. This value mirrors the spectrophotometric pK(spec) of the shift 420-384 nm of the external aldimine between DDC and 5-HT. Nevertheless, the analysis of the reaction of DDC with 5-HT under anaerobic conditions indicates that

only half-transamination occurs with a pH-independent rate constant over the pH range 6-8.5. A model accounting for these data is proposed that provides alternative pathways leading to oxidative deamination or half-transamination.

CT Medical Descriptors:

enzyme activity
pH
catalysis
decarboxylation
transamination
deamination
oxygen consumption
competitive inhibition
enzyme substrate
nonhuman
article
priority journal

Drug Descriptors:

*DOPA
*carboxylase
*aminotransferase
*deaminase
*serotonin
aromatic amino acid
aldehyde
ketone
ammonia
oxygen

RN pyridoxamine phosphate

(DOPA) 587-45-1; (carboxylase) 9027-22-9; (aminotransferase) 9031-66-7; (deaminase) 9067-84-9; (serotonin) 50-67-9; (ammonia) 14798-03-9, 51847-23-5, 7664-41-7; (oxygen) 7782-44-7; (pyridoxamine phosphate) 529-96-4

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AN 2000441646 EMBASE

TI Convenient synthesis of optically active 2,2,2-trifluoro-1-phenylethylamine.

AU Kato K.; Gong Y.; Saito T.; Kimoto H.

CS K. Kato, Department of Chemistry, Natl. Industrial Res. Inst. Nagoya, Hirate-cho, kita-ku, Nagoya 462-8510, Japan. ktykato@nirin.go.jp

SO Enantiomer, (2000) 5/5 (521-524).

Refs: 22

ISSN: 1024-2430 CODEN: EANTE2

CY United Kingdom

DT Journal; Article

FS 029 Clinical Biochemistry

LA English

SL English

AB Amination of aryl trifluoromethyl ketones with ammonium formate readily gave racemic 2,2,2,-trifluoro-1-arylethylamines in good yields. Resolution of 2,2,2-trifluoro-1-phenylethylamine was carried out with the *Pseudomonas fluorescens* lipase via enantio-selective alcoholysis of its chloroacetamide.

CT Medical Descriptors:

synthesis
optical rotation
amination
optical resolution
Pseudomonas fluorescens
enantiomer
chemical reaction
enzyme mechanism
catalyst
chemical structure
controlled study
article
priority journal

Drug Descriptors:

*2,2,2 trifluoro 1 phenylethylamine
*phenethylamine derivative
fluoroform
ketone derivative
ammonium derivative
formic acid derivative

triacylglycerol lipase: EC, endogenous compound
bacterial enzyme: EC, endogenous compound
chloroacetamide
unclassified drug
RN (fluoroform) 75-46-7; (triacylglycerol lipase) 9001-62-1;
(chloroacetamide) 79-07-2

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